

**INTENSE HEAT.  
EXTREME COLD.  
AGGRESSIVE CHEMICALS.**

**Material Technology That Handles It All.**



**Thermiculite®**

innovative. versatile. complete.

# INNOVATIVE.

Cutting-Edge Material Technology

Ever since inventing the spiral wound gasket nearly a century ago, Flexitallic has been at the forefront of fluid sealing innovation.

In 1998, Flexitallic set new standards for sealing technology with the introduction of Thermiculite® Critical Service Series gasket material available in Tanged Sheet—and later in Spiral Wound Filler and Flexpro™ (kammprofile) Facing styles.

Exclusive to Flexitallic, this revolutionary material, comprised of chemically and thermally exfoliated vermiculite\*, simulated the structure of exfoliated graphite, with one notable exception—it maintained integrity through a wide range of extreme temperatures.

All Thermiculite Critical Service Series products were designed and engineered for high temperature processes in services up to 1800°F / 982°C.

\* Vermiculite is a naturally occurring mineral with a plate-like structure demonstrating an exceptionally broad range of chemical and temperature resistance.

# VERSATILE.

A New Level of Performance

Through our continued dedication to research and development, Flexitallic is now proud to offer our customers a new series of Thermiculite products.

New Thermiculite Performance Series gasket material—developed for use in more moderate temperature applications—maintains the same broad chemical resistance and freedom from oxidation that has made Thermiculite Critical Service Series such a success.

This innovative and versatile material is available in Coreless Sheet and Spiral Wound Filler styles, and is suitable for replacing aramid fiber, glass fiber, carbon fiber, PTFE and graphite in a wide array of applications.

# COMPLETE.

The Total Static Sealing Solution

Since its inception, Thermiculite gasket material has proven itself as an effective long-term sealing solution in over 500 of the most demanding industrial sealing applications—the most complete range since asbestos.

With the combination of Thermiculite Critical Service (800 Series) and Thermiculite Performance (700 Series), a single, proven material can be used for virtually all of your sealing requirements. That's why we call Thermiculite *The Total Static Sealing Solution*.

# TOTAL FREEDOM FROM OXIDATION

Conventional graphite gaskets are susceptible to attack by oxidizing agents. This occurs from oxygen flowing through pipes, or simply from oxygen present in the atmosphere surrounding the flange. The rate at which graphite oxidizes depends on the application temperature and the concentration of oxygen present. But when it does happen—the end result is seal failure.

The unique composition of Thermiculite® gasket material ensures that seals maintain their integrity at maximum service temperatures far exceeding that of graphite.

There really is no comparison. When it comes to worry-free sealing, choose Thermiculite Critical Service Series or Thermiculite Performance Series and eliminate the risk of oxidation altogether.

Required Service Life in Years	Maximum Service Temperature		
	Graphite	Thermiculite® Critical Service Series	Thermiculite® Performance Series*
1	691°F (366°C)	1800°F (982°C)	850°F (454°C)
3	630°F (332°C)	1800°F (982°C)	850°F (454°C)
5	610°F (321°C)	1800°F (982°C)	850°F (454°C)
10	580°F (304°C)	1800°F (982°C)	850°F (454°C)

The Tightness Testing Research Laboratory (TTRL) at École Polytechnique in Montreal on behalf of the Pressure Vessel Research Council (PVRC) performed independent testing to show that the maximum service temperature for graphite in long-term service is much lower than that quoted in manufacturers' literature. This table summarizes those results.

\* Maximum service temperature results based on 1/16" thick style 715.

## Thermiculite® Critical Service Series

### Why Thermiculite® Critical Service Series?

- Total freedom from oxidation
- Chemical compatibility exceeds graphite
- Can be used in temperatures from Cryogenics up to 1800°F / 982°C
- Fire safe
- Proven track record (over 500 applications & approvals globally)
- Wide range of metals available



THERMICULITE®  
**835 Spiral  
Wound Filler**

## Thermiculite® Performance Series

**NEW!**

### Why Thermiculite® Performance Series?

- Total freedom from oxidation
- Broad chemical compatibility range
- Fire safe
- Genuine opportunity for gasket standardization and inventory consolidation
- Wide service capability



THERMICULITE®  
**715 Cut Gasket**

Available in all  
shapes and sizes.



**THERMICULITE®**  
815 Tanged Sheet

High temperature sheet reinforced with a 0.004" 316L stainless steel tanged core. Available in thicknesses of 1/32", 1/16", and 1/8" in meter by meter (standard) and 60" x 60" sheet. Cut gaskets also available in all shapes and sizes.



**THERMICULITE®**  
835 Spiral Wound Filler

High temperature filler material for spiral wound gaskets. Wide range of metals available.

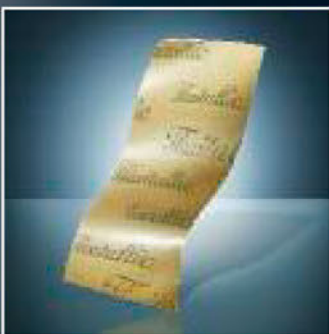


**THERMICULITE®**  
845 Flexpro™  
(kammprofile) Facing

High temperature facing material for kammprofile gaskets. Wide range of metallic core materials available.

### Recommended Services for Thermiculite® Critical Service and Performance Series

	Critical Service Series			Performance Series
	815	835	845	715
Product Type	Tanged Sheet	Spiral Wound Filler	Flexpro (kammprofile) Facing	Coreless Sheet
Temperature Range	Cryogenics to 1800°F / 982°C	Cryogenics to 1800°F / 982°C	Cryogenics to 1800°F / 982°C	Cryogenics to 850°F / 454°C
Pressure Range	Class 150 to 300	Class 150 to 2500	Class 150 to 2500	Class 150 to 300
Typical Use	High temperatures, nominal pipe sizes, non-standard gaskets, problem applications, critical seals.			Available in cut gaskets and 60" x 60" sheet.



**THERMICULITE®**  
715 Coreless Sheet

High-performance coreless sheet material. Replacement of compressed fiber sheet line, SF 2401, 2420, 3300, 5000 and tanged graphite sheet. Available in thicknesses of 1/32", 1/16", and 1/8" in cut gaskets and 60" x 60" sheet.

Effectively manage your gasket selection process, simplify inventory requirements, and receive proven long-term sealing with Thermiculite® gasket material—The Total Static Sealing Solution.

Introducing another  
**INNOVATIVE  
SEALING SOLUTION** from Flexitallic

**SIGMA™**

Flexitallic Sigma offers outstanding chemical resistance while the unique manufacturing process results in a biaxially fibrillated structure ensuring high seal integrity in the most demanding applications.

**SIGMA 500 (Blue)**

High compression glass microsphere filled PTFE sheet specially formulated for use on glass lined, plastic, or ceramic flanges.

**SIGMA 511 (Fawn)**

Standard compression silica filled PTFE sheet for use with concentrated acids and most general aggressive chemicals.

**SIGMA 533 (Off-White)**

Pigment-free barium sulfate filled PTFE sheet for use with aqueous hydrogen fluoride, strong caustics, and other general chemical media.



Other Sigma styles available.

**INDUSTRIES SERVED:**

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